

Bowling

A game consists of ten frames. In each of the first 9 frames, a player rolls one or two balls:

- A frame starts with ten pins up.
- If the first ball knocks down all ten pins, it is called a strike (written "X"), and a second ball is not thrown. As in golf, the better you are, the less you get to play.
- If the first ball knocks down less than ten pins, a second ball is thrown. If together the two balls knock down ten pins, it is called a spare (written "/").

Here is how the information is recorded for a frame OTHER THAN THE TENTH FRAME:

strike:	X
spare with 7 on the first ball:	7/
less than 10 pins on the two balls, say 4 and 5	45

In the tenth frame, if you get a spare or a strike, you throw three balls; otherwise, just two balls. Whenever all 10 pins are knocked down, they are set up again. So, you can throw three strikes in the tenth frame: XXX; or a spare and a strike, e.g. 5/X; or a spare and less than ten pins, e.g. 5/9; or less than ten pins, e.g. 81. These examples don't include all possibilities.

Here's how one calculates the score in a frame:

- In any frame, if you get less than ten pins on two throws, the score is the number of pins knocked down.
- In any frame but the tenth, if you get a spare, the score is 10+ what you get on the next ball (in the next frame).
- In any frame but the tenth, if you get a strike, the score is 10+ what you get on the next two balls.
- In the tenth frame, the score is the sum of whatever balls you roll.

Below, we show a game for Mary and one for Harry. The first line of each has the person's name together with what they rolled in each of the ten frames. The second line contains the running total score after each frame and this is how you keep a score. But remember that in this assignment, your class will maintain the score only for one frame.

Mary got a strike in every frame and three strikes in the last frame, for a perfect score of 300. Since Mary got a strike in her first frame, her score there is 10+ what she rolled on the next two balls, which were also strikes. Harry got just 9 pins in the first frame. In the second frame, he got a spare, so the score is 10 plus the next ball, which was a strike in the next frame, so his score for the second frame is 20. And so it goes.

Mary	X	X	X	X	X	X	X	X	X	XXX
	30	60	90	120	150	180	210	240	270	300
Harry	45	4/	X	6/	63	X	X	X	X	54
	9	29	49	65	74	104	134	159	178	187

When run, the code will generate a random score table at the end of each game for both players, just like in the table. In other words, without any input, the code should generate a random table according to the rules every time it is executed.